

AMATIGUAKIUS FORSBERGHI, A NEW GENUS AND SPECIES FROM ALASKA (MARINE AMPHIPODA: EPIMERIIDAE)

C. O. Coleman and J. L. Barnard

Abstract.—The new genus and species, *Amatiguakius forsbergi*, was collected in “pink coral” at 37 meters of depth from the Aleutian Islands. The new genus differs from other members of Acanthonotozomellidae in the prominent rounded lateral carinae, and laterally ridged dorsal carinae; the presence of 2 ridges on the broad dorsal carinae of pereonite 7 and pleonites; the extreme multispinosity of the outer plate on maxilla 1; the strong setation on the inner plate of maxilla 1; and, on antenna 2, the reduction of the flagellum to 3 articles, with antenna 2 shorter than antenna 1.

The new taxon, *Amatiguakius forsbergi*, to be described below, is the only species of its family found in the arctic-subarctic region; all other species occur in the antarctic-subantarctic region.

The difficulty in classifying this species was one of the reasons we (Coleman & Barnard 1991) undertook a revision of the genera in the old Epimeriidae and Iphimediidae. Part of that revision included the establishment of a new family, Acanthonotozomellidae, in which *Amatiguakius* is now placed. A key to the genera of the family is presented below and references to those genera may be found in Coleman & Barnard (1991).

Acanthonotozomellidae

Acanthonotozomellidae Coleman & Barnard, 1991:257.

Key to the Genera of Acanthonotozomellidae

- 1. Body processes bluntly rounded *Acanthonotozomopsis*
- Body processes acute or formed into distinctly dorsal carinae 2
- 2. Article 2 of maxillipedal palp medially produced . *Acanthonotozomoides*
- Article 2 of maxillipedal palp not produced 3

- 3. Pereonite 1 with 1 dorsal carina, coxae 2–3 divergent *Acanthonotozomella*
- Pereonite 1 with 2 dorsal carinae, coxae 2–3 similar *Amatiguakius*

Amatiguakius, new genus

Diagnosis.—Body stout, with dorsal carinae on pereon and metasome; pereonite 1 with 2 dorsal carinae, dorsal carinae laterally ridged, carinae on pereonite 7 and metasomites wide, with 2 ridges; lateral carinae strongly produced and rounded; head short, with straight rostrum, lateral cephalic lobes rounded; antenna 2 shorter than 1; peduncle of antenna 1 stout, with acute processes; labrum with narrow notch; mandible with narrow incisor and setal row, but no molar; lacinia mobilis present on both mandibles; maxilla 1 with large inner plate, outer plate with numerous spiniform setae, palp exceeding outer plate; setae of maxilla 2 medioapically comb-like setulate; maxillipedal palp slender, article 2 not produced; coxae 1 to 3 pointed, similar in shape and ridged; gnathopods simple, similar; bases of pereopods 5 to 7 broad, lobate ventrally; pereopods 3–7 with small setae on medial and lateral surfaces; dactyli with spiniform setae on concave margin. Telson entire.

Relationship.—The new genus bears some

resemblance to the genus *Paramphithoe* Bruzelius, 1859, in the family Epimeriidae (= Paramphithoidae, compare with Gurbanova 1972), for example: two dorsal carinae on pereonite 1; strongly produced lateral carinae; acute coxae 1 to 3. On the other hand, the head of the new species lacks a pointed lateral cephalic lobe; a mandibular molar is absent; coxa 4 is not deeply excavate; the bases of pereopods 5–7 are lobate ventrally; and the telson is short and distally rounded.

On closer view, the new type species is similar to the "Acanthonotozoma-complex" (compare Watling & Holman 1980). In particular, *Acanthonotozomella* Schellenberg, 1926, *Acanthonotozomopsis* Watling & Holman, 1980, and *Acanthonotozomoides* Schellenberg, 1931 seem to be closely related; these genera have been relegated to a new family Acanthonotozomellidae by Coleman & Barnard (1991). The combination of characters typical of *Acanthonotozomella*, *Acanthonotozomopsis*, *Acanthonotozomoides* and *Amatiguakius* that differs from genera in the Iphimediidae is as follows: gnathopods simple, similar in shape and setation (versus differences in lengths, setation and the typical euchela found in all true iphimediids); and setal raker row present (absent in Iphimediidae). The genera mentioned above bear in common: body dorsally armamented; lateral carinae present; labrum narrowly notched; mandibles with raker row, molar absent; lobes of maxilla 2 with similar setae; short and rounded telson; and dactyli at least of gnathopods with spiniform setae on concave margin. *Acanthonotozomella barnardi* Watling & Holman, 1980 and the new species bear setae in the hypopharyngeal gap. The rostra of *Acanthonotozomoides sublitoralis*, *Acanthonotozomella barnardi*, *Acanthonotozomella alata* and the new species have raised lateral edges.

The Acanthonotozomellidae differ from the monotypic Acanthonotozomatidae in the presence of mandibular rakers.

The Acanthonotozomellidae differ from the Amathillopsidae in the absence of a molar, feeble gnathopods, and lack of inner lobes on the lower lip.

The erection of the new genus was necessary because of the remarkable differences from the known genera of Acanthonotozomellidae: the prominent rounded lateral carinae; the laterally ridged dorsal carinae; the presence of 2 ridges on the wide dorsal carinae of pereonite 7 and pleonites; antenna 2 with 3 flagellar articles; and antenna 2 shorter than antenna 1.

Amatiguakius forsbergi, new species
Figs. 1–5

Etymology.—The generic name refers to the type locality. The species name is derived from the collector of the material.

Holotype.—USNM 253545, female, 28 mm in length, with setose oostegites.

Type locality.—East side of Amatiguak Island, Aleutian Islands; 13 Jul 1958; collected by Eric D. Forsbergh (Inter-American Tropical Tuna Commission) "on pink coral, caught on . . . line" [fishing line?]; depth, 20 fathoms.

Description.—Body: Stout, pereonites and pleonites with dorsal carinae, laterally ridged as in Fig. 1b. Lateral carinae on pereonites strongly projecting as in Fig. 1a. Pereonite 1 with 2 dorsal carinae, anterior carina shorter, pointing anteriorly, posterior carina slightly bent posteriorly, similar in shape and length to carinae of succeeding segments; dorsal carinae of pereonite 7 and metasome with 2 ridges laterally and wider than preceding segments (seen from lateral view); metasomal epimera ridged as in Fig. 1b, with acute process posterolateromarginally; urosomite 1 longest, with middorsal acute process, short posteromarginal process on urosomite 2, urosomite 3 excavate posteromarginally.

Head (Fig. 1c, d): Short (about as long as pereonites 1–2 together, partially hidden under coxa 1; with weak posterior elevation

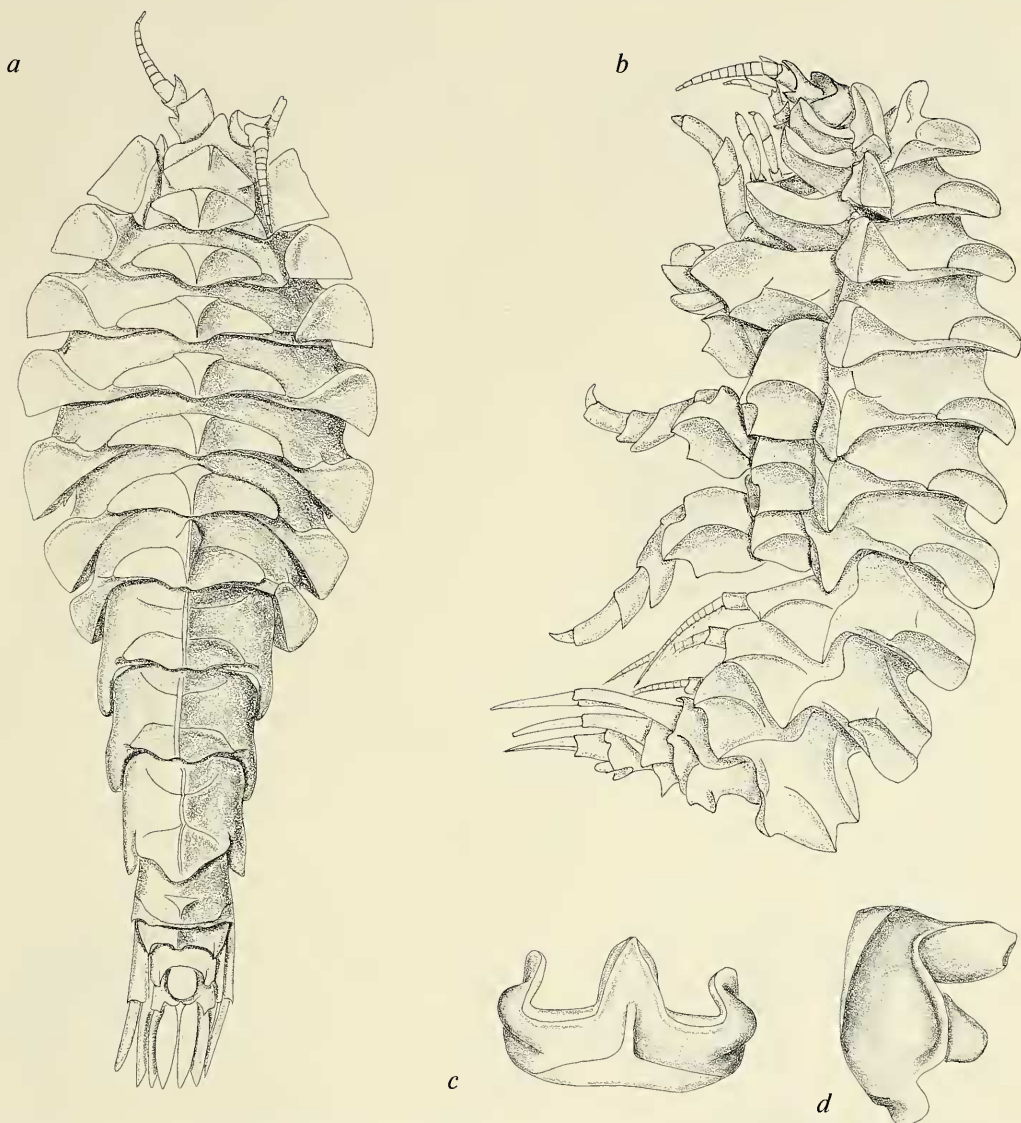


Fig. 1. a-d. *Amatiguakius forsbergi* n. sp., holotype, 28 mm in length. a, dorsal view, b, lateral view, c, head seen from dorsal, d, right lateral side of head.

and dorsal ridge; horizontal rostrum with raised lateral edges, truncate anteriorly in lateral view; rounded epistomal process between antennae 2, round lateral bulges, but no ommatidia or pigmentation (blind?); ventrolateral lobes rounded, slightly bent laterally.

Antenna 1 (Fig. 2a): Short, peduncular article 1 stout, with pointed process later-

ally; article 2 shorter, with acute process; article 3 shortest; two small rounded projections medially and proximally to flagellum, smaller one with two setae distally (vestigial accessory flagellum?); flagellum with 11 articles, each with conspicuous group of long aesthetascs and setae apically (Fig. 2c). Antenna 2 (Fig. 2b).—Shorter than antenna 1 (about 55%); peduncular articles

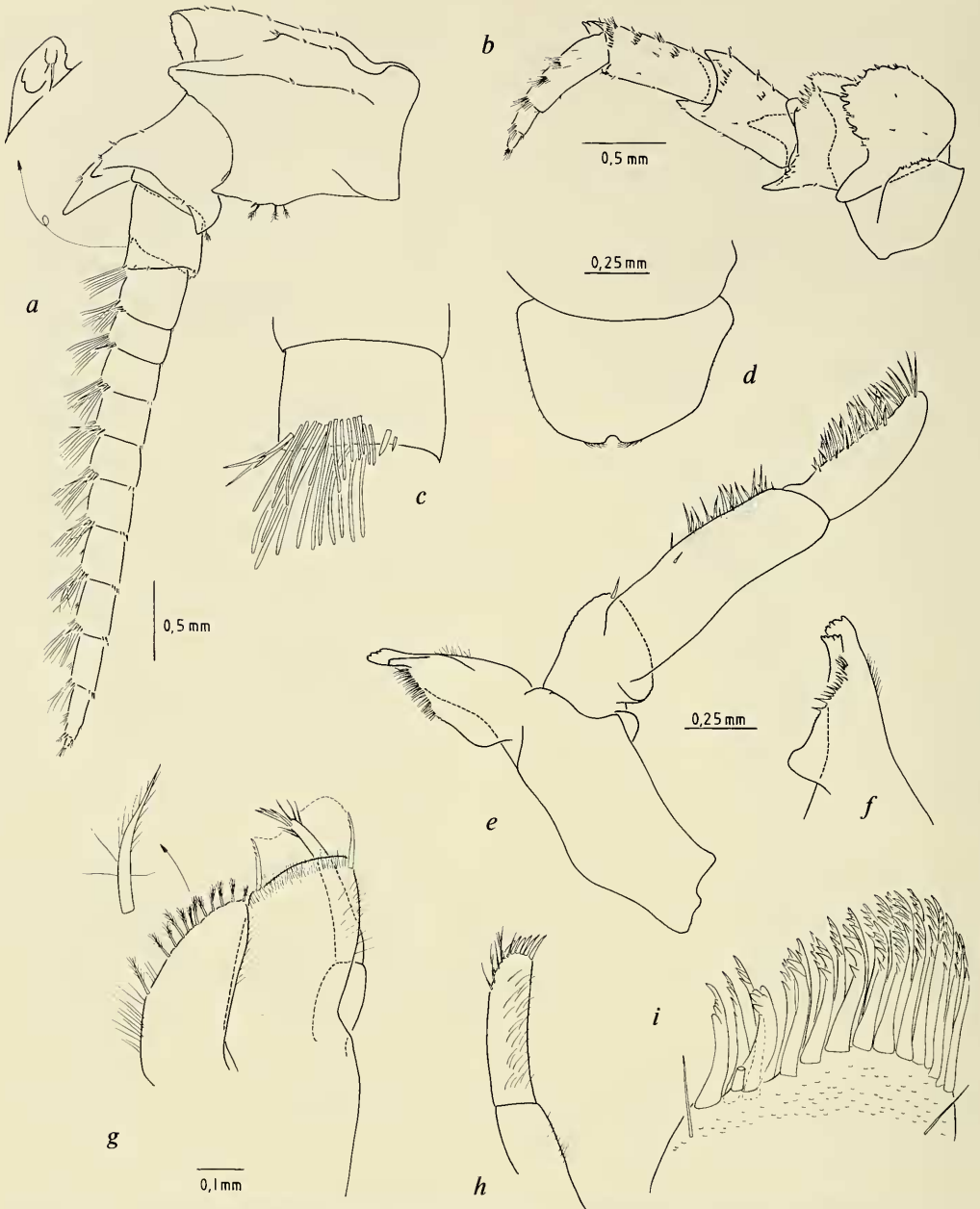


Fig. 2. a-l. *Amatiguakius forsbergi* n. sp., holotype, 28 mm in length. a, antenna 1, b, antenna 2, c, detail of antenna 1, d, labrum, e, right mandible, f, distal part of left mandible, g, maxilla 1, setae on outer plate omitted, dotted line indicates length of spiniform setae, h, palp of maxilla 1, i, spiniform setae on outer plate of maxilla 1, place of insertion of hair-like setae is shown.

1-3 short, distally serrate with short setae, articles 4-5 subequal in length, covered with groups of short setae; flagellum 3-articulate, article 1 longest, with 3 groups of setae.

Labrum (Fig. 2d): Ventral margin rounded, medially notched.

Mandibles (Fig. 2e, f): Slender, incisors narrow, weakly toothed; right mandible with

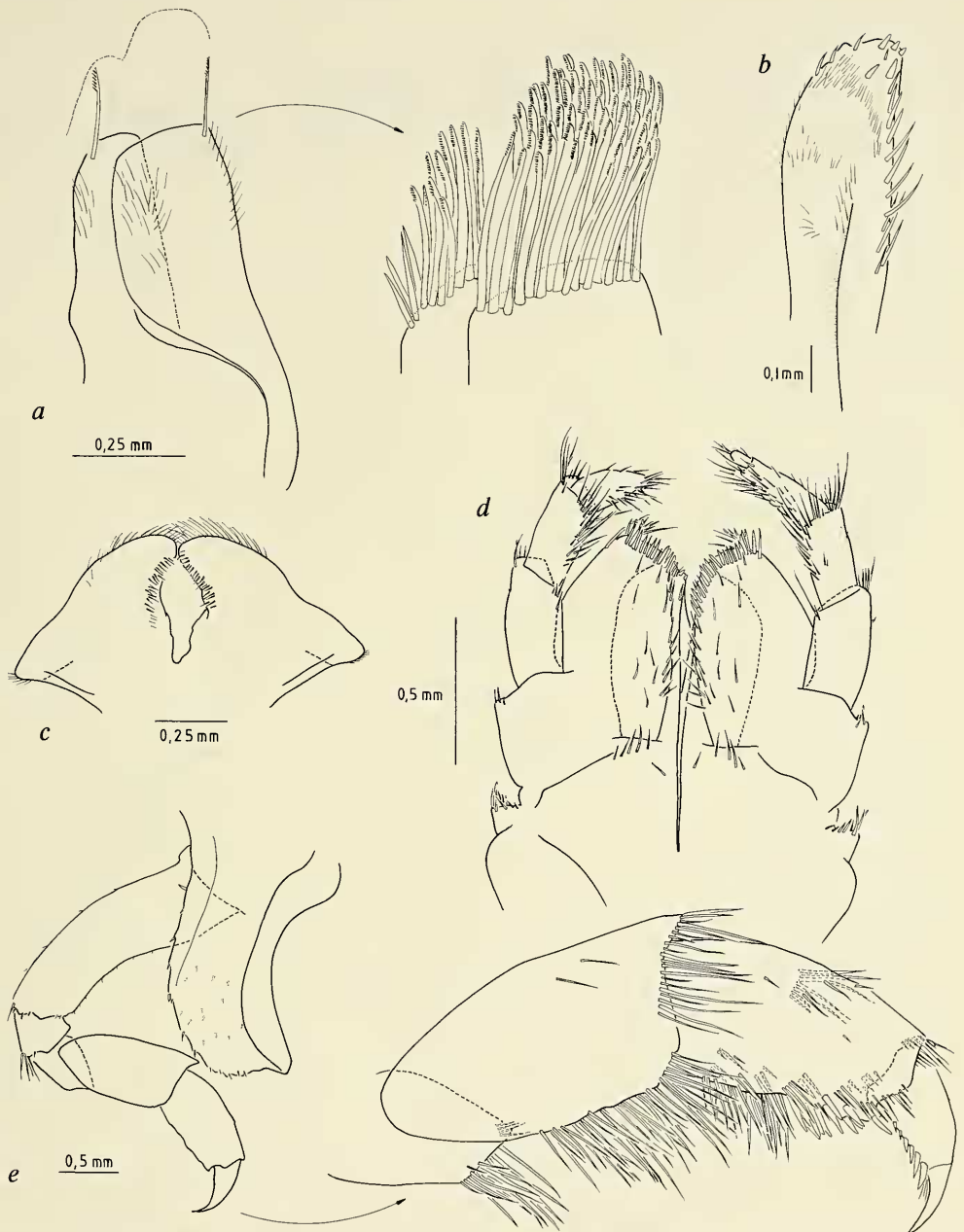


Fig. 3. a–e. *Amatiguakius forsbergi* n. sp., holotype, 28 mm in length. a, maxilla 2, dotted line indicates lengths of setae, detail shows apical region of inner and outer plate, b, inner plate of maxilliped, seen from oral side, c, lower lip, d, maxilliped, seen from ventral side, e, pereopod 1, setation of merus to dactylus on detail.

slender lacinia mobilis, left lacinia broader (Fig. 2f); raker setal row on thin projecting lamella, molar absent; palp 3-articulate, article 2 longest, with setae ventrally, article

3 slightly bent laterally, densely setose ventrally.

Lower lip (Fig. 3c): Broad; apices rounded, bent medially, covered with hair-like

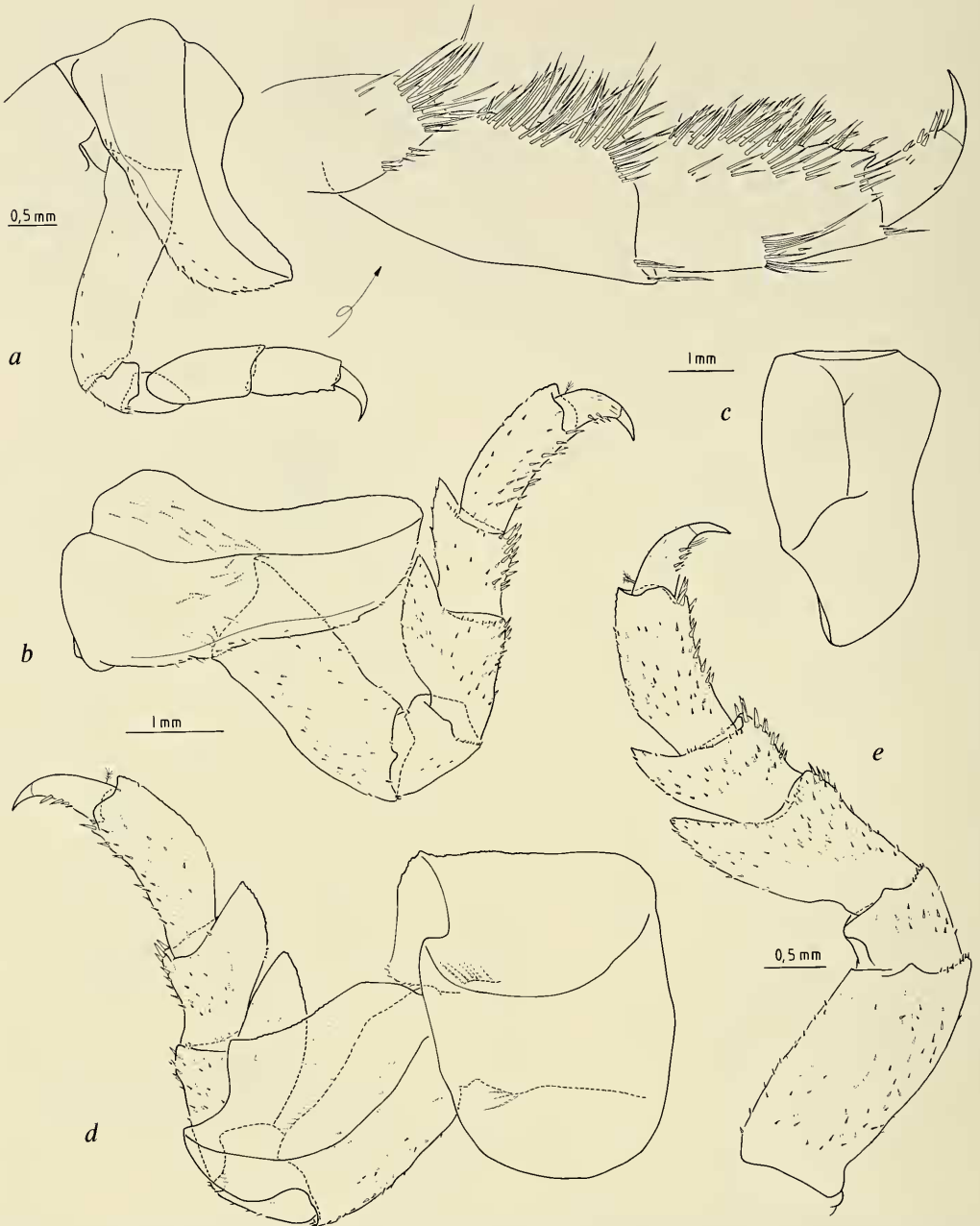


Fig. 4. a-e. *Amatiguakius forsbergi* n. sp., holotype, 28 mm in length. a, pereopod 2, setation of merus to dactylus shown on detail, b, pereopod 3, c, coxa of pereopod 4, d, pereopod 5, e, pereopod 4.

setae apically; hypopharyngeal gap with setae medially; mandibular processes broad, with hair-like setae posteriorly.

Maxilla 1 (Fig. 2g-i): Inner plate rela-

tively large, with 12 setulated setae medio-marginally; outer plate broad, densely covered with hair-like scales apically, with numerous (29?) spine-like setae, each ser-

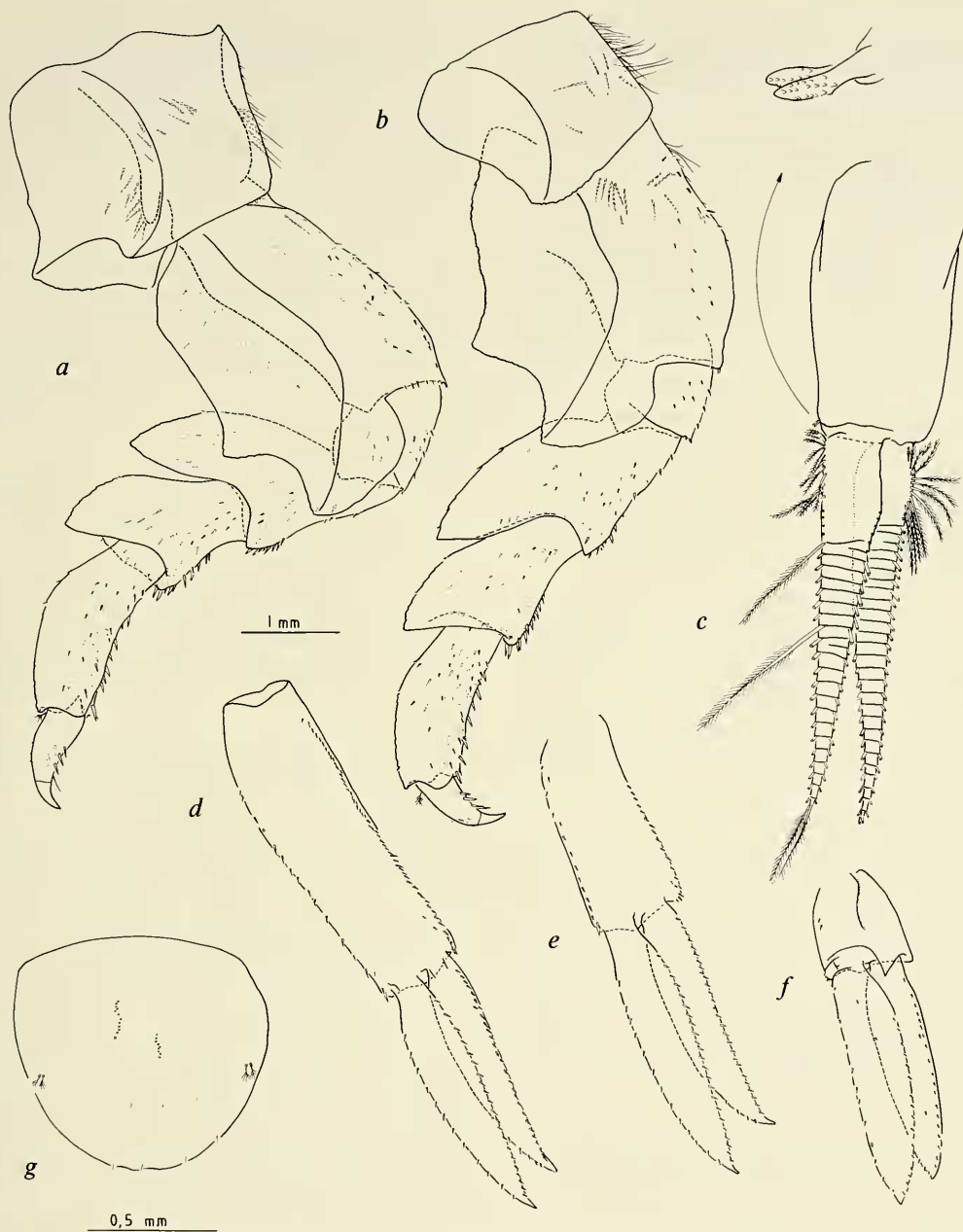


Fig. 5. a-g. *Amatiguakius forsbergi* n. sp., holotype, 28 mm in length. a, pereopod 6, b, pereopod 7, c, pleopod 1, detail shows coupling hooks, d, uropod 1, e, uropod 2, f, uropod 3, g, telson.

rate medioapically (Fig. 2i); slender palp 2-articulate, exceeding outer plate, stout setae apically, slender setae laterally.

Maxilla 2 (Fig. 3a): Outer plate wider than inner plate, equal in length, very dense se-

tation especially on outer plate, all setae distomedial comb-like setulate (except short medial straw-like scales on face of inner plate).

Maxilliped (Fig. 3b, d): Inner plate elon-

gate, short spiniform setae on distomedial angle, smooth setae on medial margin, scales on oral face; outer plate broad, with spiniform setae apically, setae mediomarginally and on ventral face; palp relatively slender, 3-articulate on right, seemingly 4-articulate on left.

Gnathopod 1 (Fig. 3e): Coxa apically pointed, sinuoid anteriorly, ridged on lateral face, additional but weaker ridge near posterior margin, short setae posteromarginally; basis slender; ischium short; merus short with group of setae apically; carpus slightly expanded distally, densely covered with setae posteriorly and apically; propodus shorter than carpus (82%), with medial and posterior setation, spiniform setae distoventrally; dactylus with spiniform setae posteromarginally.

Gnathopod 2 (Fig. 4a): Coxa similar to coxa 1; basis, ischium and merus similar to gnathopod 1; carpus only slightly expanded distally, with posterior setation; propodus setose medially and posteriorly; dactylus spiniform, with slender setae posteriorly.

Pereopods 3–7: Lateral and medial faces of articles 2–7 covered with short setae.

Pereopod 3 (Fig. 4b): Coxa longer but similar in shape to preceding coxae, but not as excavate anteriorly, basis longer than ischium and merus; merus and carpus expanded distally, with process anterodistally, with spiniform setae posteromarginally; propodus slender, with spiniform setae posteromarginally; dactylus curved with spiniform setae and claw.

Pereopod 4 (Fig. 4c, e): Coxa ridged, elongated, sinuoid anteriorly and posterodistally; basis to dactylus similar to those of pereopod 3.

Pereopods 5–7: Similar except for coxae.

Pereopod 5 (Fig. 4d): Coxa ridged, wider than long, rounded anteriorly, with rounded process on coxal face posteroventrally; basis broad, longer than merus plus carpus, ridged, posteromarginal excavation bounded dorsally by triangular projection, lobate ventrally, covering ischium and merus partial-

ly; merus and carpus stout, expanded distally into posterodistal processes, spiniform setae anteromarginally; propodus slightly rounded posteriorly, spiniform setae anteromarginally, subequal in length to merus plus carpus; dactylus with spiniform setae anteriorly.

Pereopod 6 (Fig. 5a): Coxa subquadrate, with similar rounded process as on coxa 5; basis slightly longer than that of pereopod 5; ischium to dactylus as for pereopod 5.

Pereopod 7 (Fig. 5b): Coxa small, ridged; basis similar to that of pereopod 6, but slightly wider; ischium to dactylus as for pereopods 5 and 6.

Pleopod 1 (Fig. 5c): Peduncle rectangular; rami subequal; two coupling hooks as in detail of Fig. 5c.

Uropod 1 (Fig. 5d): Peduncle elongate, with numerous spiniform setae on both margins; rami shorter (0.8) than peduncle, outer ramus slightly shorter than inner ramus, rami with rows of spiniform setae on both margins.

Uropod 2 (Fig. 5e): Rami similar to those of uropod 1 but as long as peduncle.

Uropod 3 (Fig. 5f): Peduncle short, with dorsal process apically; rami lanceolate, about 2.5 times as long as peduncle, outer ramus slightly shortened, both rami with spiniform setae on both margins.

Telson (Fig. 5g): Distally rounded; two plumose setae on each side.

Discussion.—The asymmetrical development of the maxillipedal palp of the unique specimen of the new species may be due to loss and regeneration of the right palp. It is not clear if the rounded processes proximal to the flagellum of antenna 1 may be distinguished as remnants of an accessory flagellum.

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- (COC) Fachbereich 7, Zoomorphologie, Universität Oldenburg, Postfach 2503, D-2900, Oldenburg, F.R.G.; (JLB) Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.